

Bloom's taxonomy (revised)

Contents

Introduction.....	2
Bloom's revised taxonomy	2
Keyword descriptions	2
1. Remembering:.....	2
2. Understanding:.....	2
3. Applying:	2
4. Analysing:	2
5. Evaluating:.....	2
6. Creating:	2
The structure of a learning outcome.....	3
Remembering.....	3
Understanding.....	3
Applying	3
Analysing	3
Evaluating.....	3
Creating.....	3
Objective examples for each keywords.....	4
Remembering	4
Understanding	4
Applying.....	5
Analysing.....	5
Evaluating	6
Creating	6
Reference.....	6

Introduction

This document looks at 'Bloom's revised taxonomy', in particular:

- the six levels of Bloom's revised taxonomy and the descriptions for each of the levels
- the component parts of a learning outcome (or objective)
- keywords associated with each level
- an example objective for each keyword
- a table showing: level, keywords, assessment/activity examples, suggestions for related activities and examples of outputs.

Bloom's revised taxonomy

The six levels of cognitive learning of Bloom's Taxonomy as revised by Anderson and Krathwohl (2001) are:

1. Remembering
2. Understanding
3. Applying
4. Analysing
5. Evaluating
6. Creating

The taxonomy represents the progression from lower to higher order learning skills; that is, moving from the skill of remembering through the other levels to the skill of creating.

Keyword descriptions

1. **Remembering:**
the ability to recall, recognise or remember information.
2. **Understanding:**
the ability to comprehend meaning by interpreting what has been learned; to restate/rephrase information in one's own words.
3. **Applying:**
the ability to use or apply knowledge in a context different from the one in which it was learned; to put theory into practice; to apply knowledge to real circumstances and situations.
4. **Analysing:**
the ability to break information down into its component parts to explore relationships; to interpret elements, structure, organisational principles, construction and internal relationships.
5. **Evaluating:**
the ability to make decisions based on in-depth reflection and criticism; to assess the effectiveness of whole concepts in relation to values, outputs, efficacy and viability.
6. **Creating:**
the ability to create new ideas, structures, systems, models and approaches; to use creative and critical thinking.

The structure of a learning outcome

Introduction + verb + object + modifier (as appropriate)

Remembering

Introduction	Verb	Object	modifier
On completion of/at the end of this module/unit/topic/activity, you/learners will be able to	arrange	the food items from high to low	in order of their calorific values.

Understanding

Introduction	Verb	Object	modifier
... , you/learners will be able to	compare and contrast	different weather systems	using computer generated data.

Applying

Introduction	Verb	Object	modifier
... , you/learners will be able to	apply	legal and ethical principles	to the development of a code of conduct.

Analysing

Introduction	Verb	Object	modifier
... , you/learners will be able to	determine	the key elements of	a sound business plan.

Evaluating

Introduction	Verb	Object	modifier
... , you/learners will be able to	evaluate	the financial viability of	a business.

Creating

Introduction	Verb	Object	modifier
... , you/learners will be able to	create	a protocol	for conducting an job interview.

Objective examples for each keywords

Remembering

Keywords	Objectives
Arrange	Arrange this list into a logical order.
Define	Define 'leadership'.
Describe	Describe the key features of event driven programs.
Identify	Identify the poisonous mushrooms in this list.
Label	Label the diagram of an amoeba.
List	List the stages of mitosis.
Locate	Locate the danger zones on the map below.
Name	Name 5 members of Parliament.
Recognise	Recognise the symptoms of stress from the following description.
Select	Select 3 items of equipment essential for rock climbing.
State	State the difference between an atom and its isotope.

Table 1: Objectives for remembering

Understanding

Keywords	Objectives
Classify	Classify the shapes according to their properties.
Compare	Compare the characteristics of a rat with a mouse.
Estimate	Estimate the individual costs to plumb an average 2 bedroom flat.
Explain	Explain how broadband works.
Illustrate	Describe and illustrate three number systems.
Interpret	How can we interpret correlation coefficients?
Report	Report on your activities during the field trip.
Reword	Reword the sentence omitting the word 'it'.
Summarise	Write a summary of your findings.
Translate	Translate the following into German.

Table 2: Objectives for understanding

Applying

Keywords	Objectives
Apply	Apply the principles of nutrition to support client goals.
Conduct	Conduct a complete check of the equipment.
Construct	Construct an example of a pinhole camera.
Discover	Discover which network interface is no longer active.
Produce	Produce a bifold leaflet.
Provide	Provide instructions on how to suture a wound.
React	How would you react positively to the following criticism?
Respond	Provide a suitable written response to the client's query.
Solve	What solution would you suggest to the following?
Use	Use a compass to draw a triangle.

Table 3: Objectives for applying

Analysing

Keywords	Objectives
Analyse	Provide a financial analysis of the current market.
Categorise	Categorise the following according to the criteria provided.
Classify	Classify the shapes according to the definitions provided.
Differentiate	Differentiate between management and leadership.
Distinguish	Distinguish between conformity and obedience.
Infer	What can we infer from double dissociations?
Integrate	Integrate the new rules into current procedure.
Plot	Plot a graph to show the connectivity between the components.
Survey	Survey the literature on a topic in Artificial Intelligence.

Table 4: Objectives for analysing

Evaluating

Keywords	Objectives
Assess	Assess the relevance of the techniques used.
Check for	Check for symmetry with respect to both axes.
Defend	Defend the actions of the government's approach to taxation.
Determine	Determine the relevance of sleep to good health.
Investigate	Investigate the concept and process of marketing.
Justify	Justify budgetary expenditure for the given scenario.
Present a case for	Present a case for joint performance appraisal.
Reflect on	Reflect on what constitutes good local news coverage.
Review	Review current practice in providing economic aid.

Table 5: Objectives for evaluating

Creating

Keywords	Objectives
Build	Build a working model of an earthquake.
Create	Create a protocol for conducting an interview.
Design	Design an online checkout process.
Develop	Develop procedures to implement the new strategy.
Establish	Establish a set of ground rules for dispute management.
Modify	Modify the architectural drawings to incorporate a study.
Plan	Plan a trip to cater for the needs of a young family.
Propose	Propose an alternative approach to encourage the use of public transport.
Revise	Revise the guidelines to cater for non-native speakers.

Table 6: Objectives for creating

Reference

Anderson, L. and Krathwohl, D. (eds.) (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman

Use the information and examples in this table to help you write learning outcomes and create activities and assessments.

Level	Keywords	Assessment/activity objectives	Activity suggestions	Examples of outputs
Remembering (recall or recognition of information)	arrange, define, describe, identify, label, list, locate, memorise, name, select, state	Arrange the fruits below from high to low in order of their calorific values.	quiz, 'Googling', labelling diagrams/charts/ pictures, quoting laws/ procedures, brainstorming	definition, fact chart, social bookmarking, mind map, glossaries, list, recording
Understanding (determining meaning by interpreting what has been learned; restating on one's own words)	clarify, classify, compare, contrast, distinguish, explain, estimate, exemplify, generalise, interpret, paraphrase, predict, reword, summarise, translate	Compare and contrast the climate of the Isles of Lewis and of Shetland.	interpret or explain a given scenario, advanced 'Google' searches, matching/ predicting exercises, discussion board posts	summary, classification, paraphrases, activity report, diaries, drawing, collage, recording, photograph, blogs, annotating texts
Applying (using/applying knowledge in new contexts; putting theory into practice; solving a problem)	apply, calculate, carry out, classify, conduct, construct, implement, modify, organise, perform, prepare, produce, provide, react, relate, respond to, restructure, translate, use	Identify a suitable location where a tourist in the Highlands without their own transport could be based. Provide reasons for your choice of location.	constructing an argument, presenting a solution, reporting on an activity/event, modifying a diagram, interviewing, collaborative online work and editing, using Googlemaps	diagram, sculpture, photograph, forecast, illustration (textual/graphic), project, cartoon, filmstrip, interview, simulation, film, wikis, presentation
Analysing (breaking information into its component parts; interpreting elements, structure, organisational principles, construction and relationships)	analyse, break down, catalogue, compare, deconstruct, discriminate between, divide, examine, execute, extrapolate, implement, integrate, measure, plot, quantify, produce a graph/diagram, select, show, use, value	Select two leadership styles and provide examples of situations when they might best be employed. Provide references to support your choice.	surveys, identifying constituent parts or functions, identifying requirements, distinguish between facts and inferences,	survey/poll/questionnaire, wiki, model, argument, report, advertisement, checklist, chart, academic abstract, spreadsheet
Evaluating (making judgements/ decisions based on reflection and criticism; assessing concepts)	appraise, argue, assess, combine, defend, determine, evaluate, hypothesise, investigate, justify, organise, present a case for, report on, review, test, judge, monitor	Review the financial options available when implementing a commercial takeover for the scenario provided. Perform a risk analysis for each option in relation to the scenario.	group discussion/report, debate, review options, performing a SWOT analysis, carrying out a risk analysis, posting comments on blog entries, assessing resources	editorial, case study, news item, video or audio report, presentation, critique, recommendation
Creating (the ability to create new ideas, structures, models, systems, and approaches; using creative and critical thinking)	assemble, build, compose, create, design, develop, formulate, generate, establish, integrate, modify, organise, originate, propose, revise, plan	Analyse the main meals offered in the student canteen in relation to their health benefits or otherwise. Suggest alternative meals so as to create healthier options. Justify the reasons for your choices.	developing plans/procedures, devising new methods, creating new approaches/systems, brainstorming	set of rules or standards, play/poem/song, article, video, podcast, project, publication, plan, model